PRIMARY CARCINOMA OF THE FALLOPIAN TUBE

(Report of 7 Cases)

by

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Primary carcinoma of the tube is rare. It very often creates a difficult diagnostic problem, an unsatisfactory therapeutic situation and necessitates increasing pathologic study. Preoperative diagnosis of the same is practically never made. The presence of this condition is usually masked by other associated conditions such as fibromyomata, ovarian neoplasms, or tubo-ovarian masses.

Orthmann, 1886, is credited to have recorded the first authentic case of primary carcinoma of the fallopian tube. Review of literature by Cron and Clude in 1959 has brought the total number to 600. Approximately 700 cases of primary cancer of uterine tube have been reported. Case reports from India are rare. Reddy, 1951, recorded a case of primary carcinoma of the fallopian tube from Madras and stated that 1% of malignant genital tumours is contributed by primary carcinoma of the fallopian tube. Dutta Choudary and Basu (1954) reviewed the world literature on primary carcinoma of the fallopian tube and recorded a case in a sterile woman of 35 years who reported to the hospital with symptoms suggestive of twisted ovarian cyst on admission. Reddy et al (1957) from Guntur, reviewed all the gynaecological lesions during the year 1955-56 and recorded a case of primary carcinoma of the fallopian tube associated with adenomyosis, fibromyoma and bilateral salpingitis. The rarity of tubal carcinoma, the infrequent clinical recognition of the same and associated multiple pathology met with in the ovary and uterus made us review all the cases of primary carcinoma of the tube; the details of these cases are recorded in Table I.

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Received for publication on 12-10-64.

TABLE I

Showing the Details about the 7 Cases of Carcinoma of the Fallopian Tube

Serial No.	Name & Age	Clinical Findings	Gross Pathology	Histological Findings
1.	G.M., 40 years Admitted on 3-7-56 Operated on 13-7-56 Discharged on 24-7-56	Pain lower abdomen. Prolonged periods $\frac{7\text{–}10}{20\text{–}25}$ Children .... 2. Last child 26 years. Uterus enlarged to 14 weeks' size, tender, mass left fornix. Operation: total hysterectomy with bilateral salpingo-oophorectomy.	Uterus: size 4″ x 3″ sub-mucous fibroids present; both tubes distended and nodular. Left tube wall thickened at it distal third, occluded by a friable growth.	1084-1089/56; Left tube—papillary adenocarcinoma. Right follicular salpingitis. Uterus: fibromyoma and adenomyosis.
2.	P.N., 60 years Admitted on 2-9-58 Operated on 5-9-58 Discharged on 20-9-58	Distended abdomen—3 months; children 3. Periods irregular since one year. Uterus: normal in size, bilateral tubo-ovarian mass. Tapped and 250 cc. of blood-stained fluid drawn. Operation: total hysterectomy with bilateral salpingo-oophorectomy.	Uterus: subserous fibroid 4″ x 3″ at the fundus. Left tube: fimbrial end dilated and showed papillomatous projections. Right tube and ovaries: nil abnormal.	2933-2940/58. Uterus: fibromyoma. Right tube: interstitial salpingitis. Left tube: primary adenocarcinoma with necrosis and papillary in areas. Ovary nodular, stromal hyperplasia.
3.	D.V., 32 years Admitted on 13-2-60 Operated on 15-2-60 Discharged on 1-3-60	Blood-stained discharge of 4 months' duration. Mass in the lower abdomen. Nodular tumour, partly cystic and partly solid arising from pelvis and extending up to umbilicus, felt. Clinical diagnosis: ? malignant ovarian tumour. Operation: total hysterectomy with bilateral salpingo-oophorectomy.	Uterus: normal in size. Left tube dilated and showed irregular growth 3″ x 3″. Right side—tubo-ovarian mass irregular 4″ x 4″ cut-section—variegated appearance.	343-AHC/60; chronic salpingitis with bilateral papillary adenocarcinoma.

1	2	3	4	5
4.	Sk. K. 50 years Admitted on 15-9-60 Operated on 26-9-60 Discharged on 9-10-60	Swelling and distension lower abdomen—20 days. Children: 5. Periods: regular. Attained menopause 10 years ago. Nodule felt in the right fornix. Another mass felt in the posterior fornix. Diagnosis: bilateral malignant ovarian tumour. Operation: total hysterectomy with bilateral salpingo-oophorectomy. Showed infiltration into ovary and omentum.	Uterus showed myometrial hyperplasia. Bilateral irregular tubo-ovarian masses. Cut section revealed friable growths completely occluding the tumour and extending to the ovary.	2196; A-D/60. Bilateral papillary adenocarcinoma of the tube with metastases to the omentum and to ovary.
5.	T., 40 years	Bleeding per vaginam since two years. Bilateral tubo-ovarian masses.	Multiocular cysts containing granular orange red material.	2463-A-G/60. Papillary adenocarcinoma of fallopian tube.
6.	A., 40 years Admitted on 22-7-63 Operated on 25-7-63 Discharged on 19-8-63	Red and white discharge per vaginam since two months. Dull aching pain in lower abdomen. No children. Periods regular, but scanty. Bilateral tubo-ovarian masses. Operation: subtotal hysterectomy with bilateral salpingo-oophorectomy.	Uterus: multiple subserous fibroids. Thickened tubes with matting.	2889-A-D/63. Bilateral papillary adenocarcinoma—chronic salpingitis. Ovary: nodular stromal hyperplasia and infiltration.
7.	V., 30 years Admitted on 23-4-64 Operated on 24-4-64 Discharged on 5-5-64	White discharge and pain lower abdomen—2 months. Children—nil. Periods regular. Leukoplakia vulvae; bilateral tubo-ovarian masses. Operation: total hysterectomy with bilateral salpingo-oophorectomy.	Uterus: nil abnormal. Left tube—ampullary end enlarged 4″ diameter, filled with nodules. Right side: large irregular friable mass of 4″ diameter filling the lumen.	1634-A.N./64. Bilateral papillary adenocarcinoma, chronic salpingitis. Ovary: nodular stromal hyperplasia.

Material and Methods

The material studied is from the surgically removed fallopian tubes, uteri and ovaries from the gynaecological wards of Government General Hospital, Guntur, from 1955 — to date. The total number of primary carcinoma of the tube encountered during this period is seven. During the same period, 1648 malignant lesions of the female genital tract were met with. Several sections from these specimens were studied routinely, stained with H. & E. Wherever necessary, Van Gieson, reticulum and Muci carmine stains were done. The results of these seven cases are analysed and discussed in detail.

TABLE II

Incidence of Primary Carcinoma of the Fallopian Tube as Observed by Various Workers

Author	Institution	Years covered	Gynaec. admissions	Gynaec. malig.	Cases	Percentage
Weeks, Anz & Whiting ..	Queen of Angel	10	—	640	7	1.09
Hu Taymor & Hertig ..	Free hospital	45	90,611	3878	12	0.31
Lofgren ..	Mayo	40	—	10000	16	0.16
Finn & Javert ..	Women's NYC	16	20,617	952	5	0.50
Fullerton ..	Cleveland	13	22,330	—	4	—
Emge ..	Strandfordlane	—	—	1350	5	0.45
Hayden & Potter	Chicago Lying-in hospital	26	—	1057	12	1.10
Authors ..	Government General hospital, Guntur	9	—	1648	7	0.43

Clinical Features

Incidence: The incidence of primary carcinoma of the tube is generally regarded to be more than 1% of all genital malignancy. Boyd states its incidence as 0.61%. Hertig reported that only in 0.31% of all malignancy of the female genital tract is the primary in the oviduct. The incidence as observed by various workers is given in Table II.

Age incidence: Carcinoma of the fallopian tube is a tumour of middle life and in the majority of cases in the literature was found to be occurring after 40. The average age in our series is 42. The lowest occurred in a female aged 30 and the oldest at 60. Kahn, Johnson and Muller reported a case occurring in 18 year old girl and Fullerton reported a case in an 80 year old woman.

Site Incidence

The lesion usually occurs in the outer 2/3rd of the tube. But by the time they report to the hospital the lesion might have spread to the whole of the tube and even to ovary and it is very difficult to vouch the site of origin of these tumours. In our series, 4 cases were bilateral and 3 unilateral. Bland Sutton is of the

opinion that most often these lesions are bilateral. It is often very difficult to say in bilateral cases whether the tumour arose independently in the opposite tube or it is really a metastatic spread.

Parity

Whitehouse and Doran are of the opinion that it is more common in the parous than non-parous women. It has also been observed that sterility is fairly common in these, as in the case recorded by Dutta Choudary. In our series five (70%) did not have any children.

Clinical Manifestations

In reviewing the literature a triad of symptoms is frequently mentioned as being characteristic of carcinoma of the fallopian tube: (1) blood-stained vaginal discharge; (2) acute abdominal pain; and (3) pelvic mass. Mass and bleeding occurred in all the cases and pain only in 2 of the 7 cases and these 2 cases were associated either with other lesions or both tubes were involved. In none of these cases a pre-operative diagnosis of primary carcinoma of the tube was made and only on laparotomy the condition was recognised and later confirmed by pathological studies.

Aetiology

The aetiology of carcinoma of the fallopian tube remains unknown, as in the case of other malignant lesions. Chronic salpingitis has been suggested by many as a predisposing factor. This view has been very widely contested. Though in 5 of our cases tubes were evidently the seat of chronic salpingitis, the incidence of carcinoma of the tube is disproportionately negligible as compared to the alarmingly high incidence of salpingitis. We have met with, during the same period, 381 cases of chronic salpingitis. Finn and Javert, 1949, observed that cellular reaction accompanies carcinoma rather than considering it as persisting inflammation. Lofgren and Dokerty, 1946, in their series observed 100% incidence of inflammatory lesions in the uninvolved portions of the carcinomatous tubes. Our findings of salpingitis in the uninvolved portion of the carcinomatous tube and also in the opposite tube are in concurrence with the observations of Frankel and Lofgren and Dockerty. Although analogy of chronic cervicitis and carcinoma of the cervix may not be apt to salpingitis and tubal carcinoma, the fact that a chronic inflammatory lesion is likely to exert an adverse influence in this direction cannot be ruled out, specially when we are aware of the fact that the tubes are not subjected to the same degree of repeated trauma as the cervix uteri and also the fact that tubes are often excised before malignant lesions could be initiated through continued irritation of an inflammatory process.

Other Associated Conditions

Very often, in these conditions, the enlargement of the abdomen is due to associated uterine fibroids or ovarian cyst as emphasized by Peeham. Ascites may be present in 10% of cases. Fibromyomata were seen in 3 of our cases, adenomyosis in 1 case and nodular stromal hyper-

plasia in 3 cases. Frankel found fibromyomata in 4, ovarian cysts in 3, tubo-ovarian abscess in 2 and hydrosalpinx in 1 as an associated lesion in his ten cases of tubal carcinoma.

Pathology

Gross Appearance: Gross pathology is variable. Tumour is often limited to the outer 2/3 of the tube. It is unilateral in 95% of the cases but we have observed this only in 3 of 7 cases and in 4 both tubes were involved (Fig. 1). The average size

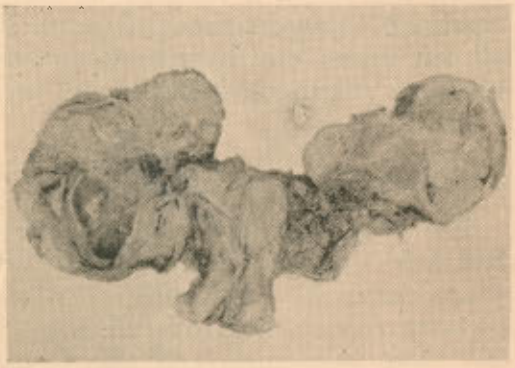

Fig. 1
Photograph shows the bilateral tubal growths which on cut section revealed areas of necrosis.

of these tumours varies from 5 to 10 cm. in diameter. In our series, the size of the growth varied from mere thickness of the tube to a size of 8 cm. in diameter. Surface is usually smooth, but irregular, sometimes papillary projections are seen. The fimbrial end is usually closed. Friable cauliflower-like mass can be seen in advanced stages.

Microscopic Appearance

Usually the tumour arises from the mucous membrane of the tube (Fig. 2) and hence it is a clear papillary adenocarcinomatous picture. All our

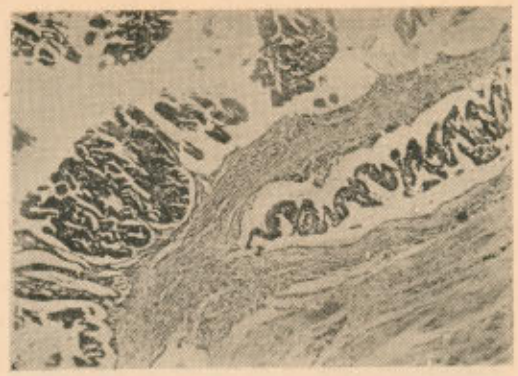

Fig. 2
Photomicrograph illustrates the origin of the tubal carcinoma from the mucous membrane of the fallopian tube H & Ex. 80.

cases showed a papillary adenocarcinomatous picture (Fig. 3) with

Fig. 3
Photomicrograph clearly demonstrates the adenocarcinomatous picture H & Ex. 60.

areas of necrosis. In one of the cases, the differentiation is complete and in others anaplastic areas could be made out with very little differentiation (Fig. 4). In one of these cases many areas of calcification could be made out.

Course of the Disease

The disease is invariably fatal and spreads locally in the tube and then

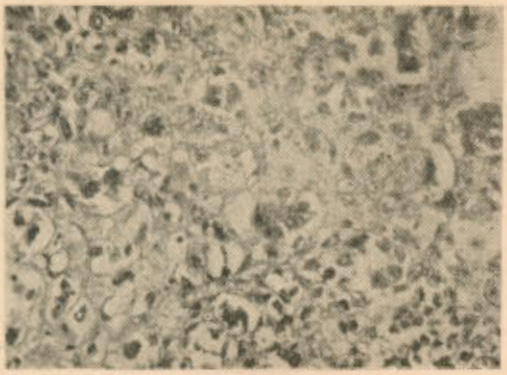

Fig. 4
Photomicrograph illustrates the anaplastic pattern of these growths in areas H & Ex. 360.

along the lumen of the tube to the round ligament. Widespread metastases may occur through lymphatics from well-circumscribed growth. Meigs stated that tubal carcinoma metastasizes to the vagina in 60% of cases. Hu et al reported vaginal metastases in 12 of their cases. Blood-borne metastases to distant organs, like liver and bone, can occur, but rare. In our cases, the growth metastasized to ovary in 2 cases. (Fig. 5).

Fig. 5
Photomicrograph shows the adenocarcinomatous infiltration into the ovary H & Ex. 60.

Treatment

Pre-operative diagnosis is rarely made, as is also observed in our cases, and only at laparotomy the condition is realised; the treatment of choice is total abdominal hysterectomy and bilateral salpingo - oophorectomy. With the discovery of a tubal mass, especially in a woman past the menopause the uterus and both tubes should be removed. External x-ray therapy has been employed in a few cases with apparently no effect in the cure rate, followed by hysterectomy. When the lesion is inoperable, x-ray treatment brought about no cure. In all our cases total hysterectomy and bilateral salpingo-oophorectomy was done.

Prognosis

The prognosis has been generally bad and only 5% of cases had five year survival. Hu and his associates reported an overall rate of 40% five year cure, and also found good correlation between histologic grading and survival rate. All our cases reported to the hospital at late stages and in some of these, deep x-ray therapy was also advised. But unfortunately we have no complete follow-up of this series and hence the correct prognosis in this series could not be judged.

Summary

(1) Literature on primary carcinoma of the fallopian tube is briefly reviewed.
(2) Seven cases of primary carcinoma of the tube were encountered during a nine-year period (1955 to 1964).

(3) Aetiology, histogenesis, pathology, treatment and prognosis are discussed with particular reference to these seven cases.

Acknowledgement

We are very thankful to the Photo-artist, Sri B. Venkateswararao for the help rendered.

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